

Name_____

Layers of the Earth

Part 1

Read the definitions and then color and label the diagrams.

Definitions:

Crust - the rigid, rocky outer surface of the Earth, composed mostly of basalt and granite. The crust is thinner under the oceans.

Inner core - the solid iron-nickel center of the Earth that is very hot and under great pressure.

Mantle - a rocky layer located under the crust - it is composed of silicon, oxygen, magnesium, iron, aluminum, and calcium. Convection (heat) currents carry heat from the hot inner mantle to the cooler outer mantle.

Outer core - the molten iron-nickel layer that surrounds the inner core.

Continental Crust - the thick parts of the Earth's crust, not located under the ocean.

Lithosphere - the crust plus the rigid, upper mantle.

Lower Mantle (semi-rigid) - the deepest parts of the mantle, just above the core.

Mohorovicic discontinuity - separates the crust and the upper mantle.

Ocean - large bodies of water sitting atop oceanic crust.

Oceanic Crust - thin parts of the Earth's crust located under the oceans.

Upper Mantle (rigid) - the uppermost part of the mantle, part of the Lithosphere.

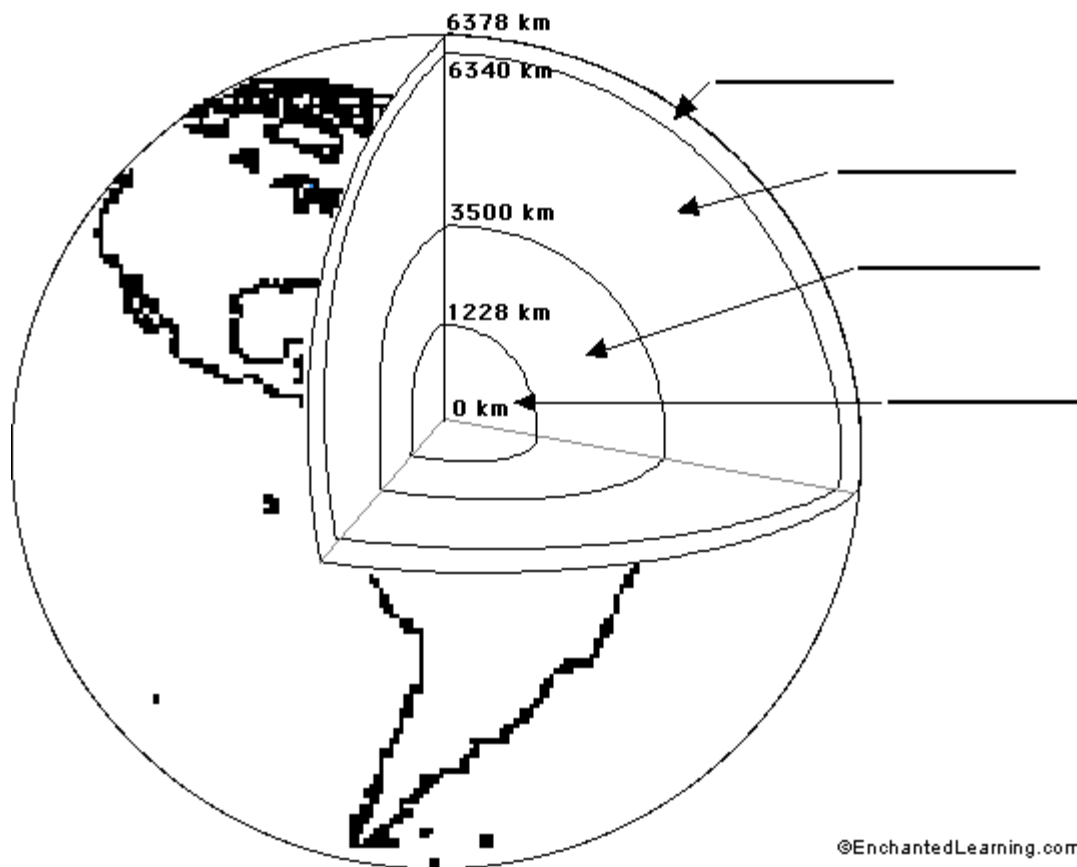
Upper Mantle (flowing) = Asthenosphere - the lower part of the upper mantle that exhibits plastic (flowing)

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properties. It is located below the lithosphere (the crust and upper mantle).

Diagram 1:

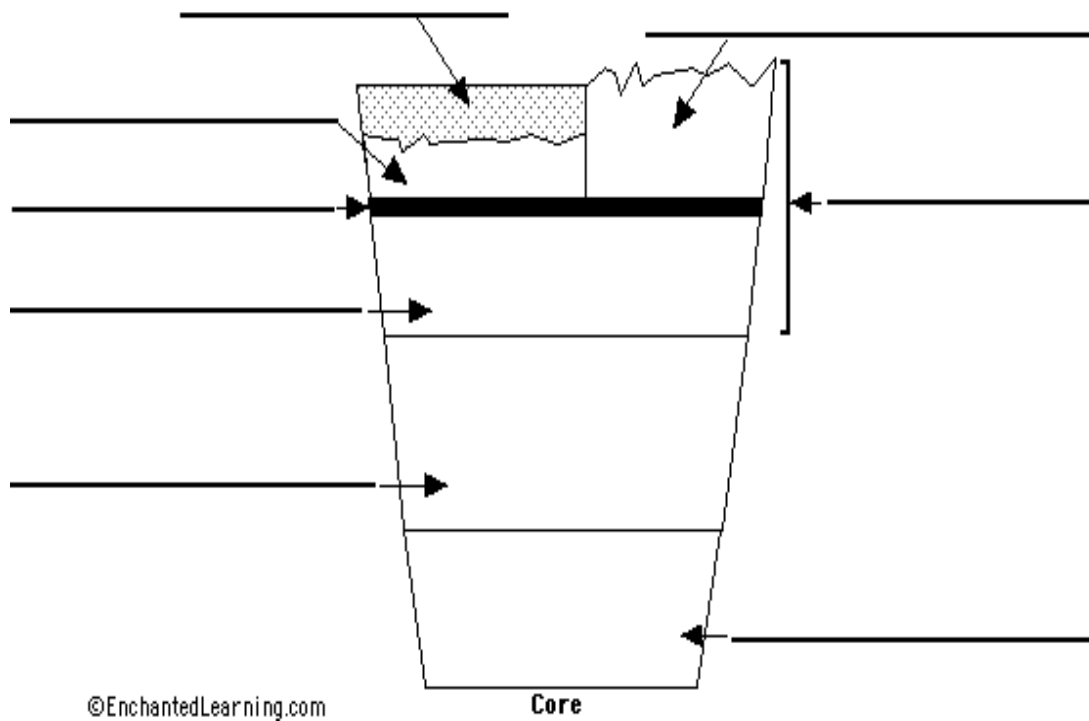
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Diagram 2:

Title:



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Part 2 Model of the Earth

Materials:

Colored paper	Scissors	Ruler
Glue	Pencil	

Procedure:

- The crust of the Earth is made of many plates which "float" above mantle. The crust is thicker and lighter at the continents and thinner and denser at the ocean floor.
 - Cut out a blue 22 cm circle labeled 6-40 miles to represent the crust.
- The mantle lies below the crust. It is a thick layer of solid rock. Many scientists believe that the mantle transfers heat from the core to the surface.
 - Cut out a brown 18 c circle labeled 1,800 miles to represent the mantle.
- The outer core is made of melted iron and nickel. It is much denser than the rock layers above it. The temperature of the outer core can range form 4000 to 9000 F.
 - Cut out a yellow 15 cm circle labeled 1,375 miles to represent the outer core.
- The inner core is made of solid iron and nickel. These materials sank to the center of the earth while it was still in a molten form.
 - Cut out a black 7 cm circle labeled 1,750 miles to represent the inner core.
- Use white construction paper for the background and label each circle at the top as it is glued to the background.

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Questions:

1. why is using a model like this a good way to learn about the layers of the Earth?
2. what are problems with using this kind of model?

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